

REMARKS

Applicant acknowledges with gratitude the courtesies extended to Applicant's representative during the interview held on January 7, 2004.

Claims 1-38 are currently pending in the present application, and claims 1-38 presently stand rejected under 35 USC § 103(a). Applicant has added new claims 39-70 that generally parallel claims 1-38; support can be found in the claims and specification as filed. No new matter is added by way of the new claims. In view of the rejection under 35 USC § 103(a), Applicant and representatives acknowledge the obligation under 37 CFR 1.56 as advised by the Examiner in the instant Office Action.

The Office Action reiterates the four factual inquiries set forth in *Graham v. John Deere Co.* for establishing a background for determining obviousness under 35 USC § 103(a). The third of the factual inquiries, resolving the level of ordinary skill in the pertinent art, has not been addressed in the Office Actions. As discussed more fully below, a proper characterization of the level of ordinary skill in the art makes it clear that the rejections under 35 USC § 103(a) are inappropriate and should be withdrawn.

The case law addressing the requirements for establishing a *prima facie* 35 USC § 103(a) rejection is well settled. In particular, establishing a *prima facie* case of obviousness under 35 USC § 103(a) requires that each of three requirements must be met. First, the references, taken alone or in combination, must teach or suggest each and every element recited in the claims. See M.P.E.P. § 2143.03 (8<sup>th</sup> ed. Rev. 1, Feb. 2003) citing *In re Royka*, 490 F. 2d 981, 180 USPQ 580 (CCPA 1974). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. And third, a reasonable expectation of success must exist. Furthermore, each of these requirements must "be found in the prior art, and not be based on applicant's disclosure." M.P.E.P. § 2143 (8<sup>th</sup> ed. Rev. 1, Feb. 2001). Determinations of *prima facie* obviousness must be supported by a finding of "substantial evidence." See *In re Zurko*, 258 F. 3d 1379, 1386 (Fed. Cir. 2001). Specifically, unless "substantial evidence" is found in the record that supports the factual

determinations central to the issue of patentability, including motivation, the rejection is improper and should be withdrawn. In this case, there is no “substantial evidence” in the record to support the combinations alleged by the Examiner, nor is there the requisite “clear and particular” motivation required to support a *prima facie* case of obviousness.

### **35 USC § 103(a) Rejection of Claims 1-11 and 14-37**

Claims 1-11 and 14-37 stand rejected under 35 USC 103(a) as being unpatentable over Hedman et al. (U.S. Patent No. 6,327,812) in view of Rosenblatt et al. (U.S. Patent No. 4,681,739).

One of ordinary skill in the art would not combine the chlorine dioxide of Rosenblatt with the method of Hedman to arrive at the present claimed invention. As such, the teachings of Rosenblatt cannot be used to cure the deficiencies of Hedman. Specific issues are discussed below.

Regarding claim 1, Hedman discloses a method for destroying and removing organisms and toxins from an enclosure, such as a building, using an environmentally acceptable gas that is heated at high temperatures, over 120°F. Hedman’s requirement of an environmentally acceptable gas is a requirement of EPA regulations. Stated objects of Hedman are (1) to provide a nontoxic method for destroying organisms, (2) to remove substantially all remains of killed organisms from open areas of the enclosure, and (3) to ensure that all areas of the enclosure reach a high predetermined temperature (col. 2, lines 20-22, lines 27-29, and lines 36-38, respectively). In particular, Hedman requires a positive pressure inside the building such that hot air escapes from the enclosure with sufficient velocity so as to allow dead organisms to become airborne so that the organisms are trapped by a filter associated with an exhaust vent (col. 3, lines 26-33). Hedman further requires the use of a heater, preferably a propane heater, to raise the temperature of the structure up to at least 120°F (col. 3, lines 5-11).

The registered uses for chlorine dioxide gas are summarized on a fact sheet available on the EPA’s website ([www.epa.gov/pesticides/factsheets/chemicals/chlorinedioxidefactsheet.htm](http://www.epa.gov/pesticides/factsheets/chemicals/chlorinedioxidefactsheet.htm)). A copy of the fact sheet for chlorine dioxide is included in a Supplemental IDS filed herewith. The chlorine

dioxide fact sheet does not list fumigation of habitable structures as a registered use for liquefied or gaseous chlorine dioxide.

In fact, chlorine dioxide could not lawfully be used in fumigating a building until an emergency order was issued in the form of a crisis exemption under FIFRA in response to the anthrax contamination of the Hart Senate Office Building in the fall of 2001. The crisis exemption for anthrax incidents was released by the EPA on November 30, 2001 (the filing date of the present application) in a memorandum entitled FIFRA Crisis Exemption for Anthrax Incidents. A copy of the FIFRA memo is also included in the Supplemental IDS filed herewith. Even with the crisis exemption, the application of chlorine dioxide gas for fumigation of habitable structures was limited solely to the Hart Senate Office Building (see page 2 of memo). The sale of chlorine dioxide products was limited to the sale of registered products to employees of the EPA, other federal, state or local government agencies and the U.S. Postal Service.

In the regulatory environment, Hedman's requirement to use an environmentally acceptable gas precludes the choice of chlorine dioxide. In addition, Hedman fails to teach or suggest generating a poisonous and explosive gas such as chlorine dioxide gas, delivering an explosive gas such as chlorine dioxide, or using chlorine dioxide gas for fumigating a structure as taught by Applicant's claim 1.

Rosenblatt teaches a method for sterilizing a substantially gas impermeable article using chlorine dioxide gas (abstract). In particular, Rosenblatt places contaminated articles into a chamber capable of having a vacuum drawn thereon and further having a capacity of a few liters, humidifies the air inside the enclosure, and injects chlorine dioxide gas therein in concentrations preferably in the range of 10 mg/L to 40 mg/L (abstract col. 4, lines 20-24, and col. 4, lines 30-35).

The Examiner correctly concludes that "Hedman et al. fails to disclose climatizing the enclosed volume and generating chlorine dioxide" (Office Action ¶4, page 3). However, after reviewing Rosenblatt, the Examiner concludes that "it would have been obvious to one of ordinary skill in the art to substitute a known sterilant (ozone) for another (chlorine dioxide) since chlorine dioxide sterilizes at short exposure times and at near ambient temperature and

near ambient pressures” (Office Action, ¶4, page 4). Applicant respectfully submits that, in the absence of a resolution of the level of skill of the ordinary fumigator, such a statement is conclusory. Proper characterization of one of ordinary skill and a recognition of the EPA regulations is part of the prior art precludes the combination of Hedman and Rosenblatt. Applicant respectfully requests that the 35 USC § 103(a) rejection of independent claim 1 be withdrawn and that claim 1 be allowed.

Regarding claim 2, the Office Action alleges that Rosenblatt teaches the elements of claim 2, namely “wherein the step of removing the chlorine dioxide gas includes the steps of purging the generator and emitter and scrubbing chlorine dioxide gas from the enclosed volume”. However, arguments with respect to claim 2 do not overcome the deficiencies with respect to claim 1 from which claim 2 depends, namely that one of ordinary skill would not combine Hedman and Rosenblatt. Extracting additional materials from one of the references does nothing to cure these deficiencies with respect to claim 1; and therefore, claim 2 is allowable.

Regarding claims 3 and 4, the Office Action alleges that Rosenblatt in conjunction with Hedman teaches elements of these claims. The referenced portion of Rosenblatt allegedly teaching the elements of claims 3 and 4 does nothing to cure the defects of Hedman or Rosenblatt with respect to independent claim 1 from which claims 3 and 4 depend. Therefore, claims 3 and 4 are allowable.

Regarding claims 5 and 6, the Office Action alleges that Rosenblatt teaches an emitter also used for scrubbing (claim 5). However, Applicant finds no arguments with respect to claim 6 in view of Rosenblatt (Office Action page 5). The Office Action also includes the following with respect to claims 5 and 6: “Also, as mentioned above with respect to claim 1, Hedman et al. uses ozone emitters (col. 3, lines 46-49 and Figure 1, 20) in building, which was previously habitable and also teaches of removing ozone from buildings (Figure 1, 22, 24 and 26) after completing treatment of a building (restoring habitability).” It is not clear whether this text relates to either claim 5 or 6 since Hedman (1) does not use a scrubber (claim 5 and 6), (2) shows the exhaust fan outside the structure in Fig. 1, (3) does not show an emitter used as a

scrubber (claim 5 and 6), (4) nor does Hedman show the emitter used for scrubbing as being located in a habitable structure (claim 6).

Regarding claims 7-10, 14 and 24, the Office Action alleges that Rosenblatt teaches adjusting both the relative humidity and temperature *in a habitable enclosed volume* (claim 7 as depending from claim 1), intrinsically avoids condensation by monitoring and controlling the dew point within the enclosed volume (*i.e. habitable enclosed volume*) (claim 9 and 24 as depending from claim 1), and reducing the level of illumination *in a habitable enclosed volume* (claim 14 as depending from claim 1).

As noted above, Rosenblatt is not directed to anything other than small sealable enclosures capable of having vacuums drawn thereon. Furthermore, there is no suggestion in the teachings of Rosenblatt for combining it with the teachings of Hedman. One skilled in the art would be motivated against the combination of Hedman and Rosenblatt. Therefore, the elements of dependent claims 7-10, 14 and 24 are not taught by the cited references and any rejection of these claims under 35 USC § 103(a) is improper. Applicant respectfully requests that claims 7-10, 14 and 24 be allowed.

Regarding claims 21-23 and 31-33, the Office Action alleges Rosenblatt teaches that the enclosed volume undergoes a vacuum, the chlorine solution inherently has an equilibrium partial pressure (col. 6, lines 1-7), the sterilant gas penetrates the contents in the enclosed volume and the enclosed volume requiring fumigation is contaminated with any type of spore.

Webster's Dictionary defines vacuum as (a) a space absolutely devoid of matter, (b) a space partially exhausted (as to the highest degree possible) by artificial means, or (c) a degree of rarification below atmospheric pressure. While it is true that Rosenblatt teaches drawing a vacuum on the small chamber (approx. 2 liters) used therein; Applicant's claim 21 does not teach "a vacuum". In contrast, claim 21 recites "The method of claim 1 wherein said volume is maintained at a *slightly* negative pressure to areas located outside of said volume." (*emphasis added*). Not only does Rosenblatt fail to teach the elements of claim 21, but it fails to teach the elements of claim 1, alone or in combination with Hedman, and therefore it cannot form the basis of a valid 35 USC§ 103(a) rejection. As such, allowance of claim 21 is requested.

Regarding claim 23 and claims 31-33, the combination of Rosenblatt and Hedman fails to teach every element of claim 1 and therefore the combination cannot teach the limitations of claims 22, 23 and 31-33 which depend from claim 1 either directly or indirectly. Allowance of claim 22, 23 and 31-33 are respectfully requested.

Dependent claims 36 and 37 are allowable because neither Hedman nor Rosenblatt alone or in combination teach each and every limitation of independent claim 1 from which claims 36 and 37 depend either directly or indirectly.

### **35 USC § 103(a) Rejection of Claim 12**

Regarding claim 12, the Office Action alleges that Hedman in combination with Rosenblatt and Smith teach each and every limitation claimed. The Examiner properly notes that neither Hedman nor Rosenblatt teach treating a vehicle. However, the Office Action goes on to incorrectly state that it would have been obvious to modify the references using Smith to include treating a vehicle, since there is an established relationship between respiratory ailment symptoms and automobile air conditioning.

Smith discloses a method for treating an air-contacted surface of an air conditioning system (abstract, col. 3, lines 50-53, and col. 6, lines 3-7). Nowhere does Smith teach disinfection of the entire passenger compartment of organisms existing anywhere other than within the air conditioning ductwork. In fact, Smith teaches away from Applicant's invention.

In contrast, Applicant's invention of claim 12 fumigates all surfaces including the occupants' spaces and leaves no residue after treatment. Smith actually teaches away from Applicant's invention of claim 12 in still other ways. First, Smith attempts to reduce the humidity level in the air conditioning duct when humidity levels approach 70% (col. 8, lines 58-62). In contrast, Applicant's invention climatizes the environment by adjusting the humidity until it reaches a range of 60-80%. As seen from the foregoing arguments, Smith does nothing to overcome the shortcomings of Hedman and Rosenblatt in relation to claim 12. And, when taken as a whole, Smith teaches away from Applicant's claimed method. In view of the foregoing remarks, allowance of claim 12 is respectfully requested.

**35 USC § 103(a) Rejection of Claim 13**

Regarding claim 13, the Office Action alleges that Hedman in combination with Rosenblatt and Halaby teach every element of claim 13. Halaby teaches an apparatus for controlled, intermittent, automatic dispensing of atomized fluid such as insecticide (abstract). Halaby discloses a special apparatus comprising a blower, fluid chamber, atomizer and nozzles (Fig. 1, Fig. 4, col. 3, lines 1-32). Halaby does not purport to be an HVAC system implicitly nor explicitly. The Applicant respectfully requests that the Examiner withdraw the rejection to claim 13 since Halaby does not teach as the Office Action describes. The Halaby reference does provide motivation to combine Rosenblatt and Hedman and does not overcome the shortcomings of the two references individually which have been discussed hereinabove in connection with claim 1, from which claim 13 depends. In view of these arguments, Applicant respectfully requests allowance of claim 13.

**35 USC § 103(a) Rejection of Claim 38**

Regarding claim 38, the Examiner alleges that Hedman, Rosenblatt and Spink taken together teach every element of the claim. In particular, the Examiner argues that it would have been obvious to substitute the detoxification process of Spink with the disclosures of Hedman and Rosenblatt to arrive at the invention of claim 38. As previously argued in conjunction with claim 1, the prior art strongly teaches away from the combination of Hedman and Rosenblatt. Even if Hedman were combined with Rosenblatt, the combination fails to teach the elements of claim 1. Adding Spink to the mix does nothing to cure the deficiencies. And, therefore, a valid 35 USC § 103(a) rejection of claim 38 cannot be sustained. Applicant respectfully requests that claim 38 be allowed.

**CONCLUSION**

The cited references taken alone or in combination do not support the rejection of claims 1-38 under 35 USC § 103(a). As a result, the rejections of claims 1-38 should be withdrawn. Applicant respectfully submits that new claims 39-70 are based on the pending claims 1-38, introduce no new matter, raise no new issues of patentability, and are similarly allowable.

Reconsideration and allowance of claims 1-70 are respectfully requested. If the Examiner feels that a telephone call would expedite the prosecution of this case, the Examiner is invited to call the undersigned at (508) 416-2433.

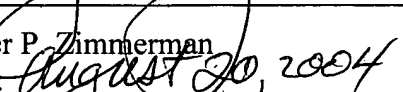
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